

## ABSTRACT

### BAND-GAP REFERENCE CIRCUIT WITH HIGH POWER SUPPLY RIPPLE REJECTION RATIO

Nicolae Marin and Sridhar Kotikalapoodi

**[0095]** A band-gap reference circuit with a high Power Supply Ripple Rejection Ratio is provided. The reference circuit includes a core reference circuit with a core output terminal, a voltage amplifier, coupled to the core output terminal and having a voltage amplifier terminal, a transconductance amplifier, coupled to the voltage amplifier terminal, and a shared voltage rail, coupled to the core reference circuit and the transconductance amplifier. The voltage amplifier and the transconductance amplifier can include multiple stages. The reference circuit can be operated at low voltages, including 1.3-1.4V. The reference circuit has low spreading among similarly manufactured systems, partially due to the fact that the reference circuit does not utilize differential amplifiers. The reference circuit has a high power supply ripple rejection ratio. For example, ratios in excess of 100dB are achieved at low frequencies. Also, no startup circuit required for the operation of the reference circuit.